CLAIMS

1. A marker protein for diagnosing liver disease selected from a protein which is a human fibrinogen α-E chain decomposition product and has a molecular weight of 5,900 (5.9 kDa protein), a protein which is an apolipoprotein AII decomposition product and has a molecular weight of 7,800 (7.8 kDa protein), a protein which is apolipoprotein AI and has a molecular weight of 28,000 and variants of these proteins which have the same function as that of the proteins as a marker protein for diagnosing liver disease.

2. A marker protein for diagnosing liver disease according to claim 1, wherein the 5.9 kDa protein is a protein having the amino acid sequence shown as SEQ ID NO: 1 in the sequence listing, and the variant thereof is a protein having 90% or more homology with said amino acid sequence or a protein having an amino acid sequence formed by deletion, substitution or addition of one or more amino acid residues in the amino acid sequence shown as SEQ ID NO: 1.

3. A marker protein for diagnosing liver disease according to claim 1, wherein the 7.8 kDa protein is a protein having the amino acid sequence shown as SEQ ID NO: 2 in the sequence listing, and the variant thereof is a protein having 90% or more homology with said amino acid sequence or a protein having an amino acid sequence formed by deletion, substitution or addition of one or more amino acid residues in the amino acid

sequence shown as SEQ ID NO: 2.

4. A marker protein for diagnosing liver disease according to claim 1, wherein the protein which is apolipoprotein AI and has a molecular weight of 28,000 is a protein having the amino acid sequence shown as SEQ ID NO: 3 in the sequence listing, and the variant thereof is a protein having 90% or more homology with said amino acid sequence or a protein having an amino acid sequence formed by deletion, substitution or addition of one or more amino acid residues in the amino acid sequence shown as SEQ ID NO: 3.

5. A marker protein for diagnosing liver disease according to any one of claims 1 to 4, which is for diagnosing a liver disease caused by drinking.

6. A marker protein for diagnosing liver disease according to claim 5, which is for diagnosing an alcoholic liver trouble or alcohol dependence.

7. A method for diagnosing the probability of the onset of a liver disease, the liver disease or the prognosis of the liver disease by detecting or quantifying the marker protein for diagnosing liver disease according to any one of claims 1 to 6 in a sample obtained from a patient who is suspected to have the liver disease.

8. A diagnosis method according to claim 7, wherein the liver disease is a liver disease caused by drinking.

9. A diagnosis method according to claim 8,

wherein the liver disease is an alcoholic liver trouble or alcohol dependence.

10. A diagnosis method according to any one of claims 7 to 9, wherein the detection or quantification of the marker protein for diagnosing liver disease in the sample is carried out by mass spectrometry.

11. A diagnosis method according to claim 10, wherein the diagnosis is carried out by analyzing the pattern of a spectrum obtained with a mass spectrometer.

12. A diagnosis method according to claim 10 or 11, wherein the mass spectrometry is carried out with a laser desorption/ionization-time of flight-mass spectrometer (LDI-TOF MS).

13. A diagnosis method according to claim 12, wherein the laser desorption/ionization-time of flight-mass spectrometer is a surface enhanced laser desorption/ionization-time of flight-mass spectrometer (SELDI-TOF MS).

14. A diagnosis method according to any one of claims 7 to 9, wherein the detection or quantification of the marker protein for diagnosing liver disease in the sample is carried out by an immunoassay method using an antibody against said protein.

15. A diagnosis method according to claim 14, wherein the immunoassay method is an enzyme immunoassay method (EIA method), an immunoturbidimetry method (TIA method), a latex immuno-agglutination method (LATEX

method), an electrochemiluminescence method or a fluorescence method.

16. A diagnosis method according to claim 15, wherein the immunoassay method is an enzyme immunoassay method (EIA method).

17. A protein having the amino acid sequence shown as SEQ ID NO: 1 in the sequence listing, or its variant having the same function as that of said protein as a marker protein for diagnosing liver disease, said variant being a protein having 90% or more homology with said amino acid sequence or a protein having an amino acid sequence formed by deletion, substitution or addition of one or more amino acid residues in the amino acid sequence shown as SEQ ID NO: 1.

18. A protein having the amino acid sequence shown as SEQ ID NO: 2 in the sequence listing, or its variant having the same function as that of said protein as a marker protein for diagnosing liver disease, said variant being a protein having 90% or more homology with said amino acid sequence or a protein having an amino acid sequence formed by deletion, substitution or addition of one or more amino acid residues in the amino acid sequence shown as SEQ ID NO: 2.

19. A method for measuring a protein or its variant according to claim 17 or 18, or a protein which is apolipoprotein AI and has a molecular weight of

28,000 or its variant having the same function as that of this protein as a marker protein for diagnosing liver disease, by an immunoassay method by the use of an antibody against each of the proteins or the variants.

20. A diagnosis method according to claim 19, wherein the immunoassay method is an enzyme immunoassay method (EIA method), an immunoturbidimetry method (TIA method), a latex immuno-agglutination method (LATEX method), an electrochemiluminescence method or a fluorescence method.

21. A diagnosis method according to claim 20, wherein the immunoassay method is an enzyme immunoassay method (EIA method).